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26 August 1970

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MEMORANDUM FOR: Deputy for Materiel, OSA

SUBJECT : Dual Liquid Oxygen Equalization System

25X1 REFERENCE : [redacted] Proposal; Same Subject

1. Recommend no further effort be undertaken by [redacted] 25X1 to investigate LOX equalization feeding at this time.

2. Proposal A (see attachment) is not acceptable because of the requirement to increase the converter pressure to 300 psig. Early in the development of this liquid-oxygen system, pressure-control valves proved to be the "weakest link in the chain" and to re-introduce such a concept would certainly seem to be unwise at this point.

3. Proposal B would operate on a sensing valve equalizing by the weight of liquid oxygen remaining in each converter. Although the engineer denies the dependency of one system upon the other in this proposal, both the operational diagram and the narrative summary illustrate mechanical enslavement which would seem to negate the redundancy characteristic built into this dual oxygen system.

4. Proposal C operates on the same concept as System B except oxygen pressure is used for equalization instead of liquid weight and again brings up the question of pressure

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reducer valves. Additionally, a differential pressure gauge, which would be necessary here, historically has not proved itself in tolerating positive 'G'.

5. In view of the above and with the recent long ferry missions where even feeding was demonstrated and with more stringent LOX servicing procedures and regulator adjustments, it appears that the problem of unequal O_2 feeding may be self-limiting and that no further action will be necessary.

SIGNED

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AMS/OSA

Attachment
As stated above

25X1 AMS/OSA,

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1 - Addee
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